TECHNICAL SPECIFICATION

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Transport packaging — Small load container systems —

Part 2: Column Stackable System (CSS)

Emballage — Systèmes de transport de petites charges —

Partie 2: Systèmes gerbable en colonnes (SGP)

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 122, *Packaging*.

ISO 19709 consists of the following parts, under the general title *Transport packaging — Small load container systems*:

— *Part 1: Common requirements and test methods*

— *Part 2: Column Stackable System (CSS)* [Technical Specification]

— *Part 3: Bond Stackable System (BSS)* [Technical Specification]

Introduction

The small load container (SLC) system specified in this part of ISO 19709 was first conceived for handling, storage and transport of goods and designed to meet the needs of automotives manufacturers and their suppliers.

The multi-functional design of its elements allow a SLC system manufactured in accordance with ISO 19709 to meet the requirements of different manual, mechanical and automatic handling, transport and storage systems in the automotive industry transportation chain. It is likely that this system of SLCs and accessories will frequently be used in a pool.

The special characteristic of the system specified in ISO 19709 is the self-securing mechanism of the unit load in the column stack. For this reason, this system is called column stackable system.

The CS system consists of the following elements:

— CSS-SLC;

— Lid [the prefix “D” reflects the German term for “lid” (Deckel)];

— Pallet cover [the prefix “A” reflects the German term for “cover” (Abdeckung)].

The use of CSS-SLC systems with palletized loads is discussed in Annex A.

Transport packaging — Small load container systems —

Part 2: Column Stackable System (CSS)

1 Scope

This part of ISO 19709 specifies the main characteristics and the testing of durable, reusable, parallelepipedic containers and their accessories which form a column stackable system (CSS) designed to contain bulk or precisely located component loads up to maximum load of 20 kg used for automotive industry applications.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 19709-1:—[1)], *Transport packaging — Small load container systems — Part 1: Common requirements and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19709-1 and the following apply.

3.1
CSS small load container
small load container (SLC) with special functional features which ensure a mutual compatibility

3.2
pallet cover
system element with a safeguarding and protective function that closes the top of the loading unit with a level surface that distributes the mass of overlying loads in a stack

3.3
SLC capacity
usable inner volume which is calculated by multiplying the usable inner length by the usable inner width (both measured at half height) and the usable inner height

3.4
SLC lid (D 65, D 45, D 35)
BSS-SLC and CSS-SLC system elements with virtually neutral height for protection of the cargo

Note 1 to entry: The prefix “D” reflects the German term for “lid” (Deckel).

Note 2 to entry: The number 65 means lid for the 600 mm × 400 mm size containers. The number 45 means lid for the 400 mm × 300 mm size containers. The number 35 means lid for the 300 mm × 200 mm size containers.

3.5
SLC unit load
load consisting of a SLC which forms a unit for handling, transport, stacking and storage

1) To be published.

4 Characteristics

The heights of CSS SLCs are determined in such a way that when used in combination with a 150 mm high pallet and a cover they form a nominal unit load height of 1 000 mm (see Annex A).

The column stackable system is characterized by the following features:

a) maximum load: 20 kg;

b) "load space" and "functional space for handling" are clearly separated;

c) smooth, flat internal SLC surfaces without undercuts permit rapid, reliable manual removal of the contents and mechanical/automatic filling and emptying;

d) functional features, see Clause 6.

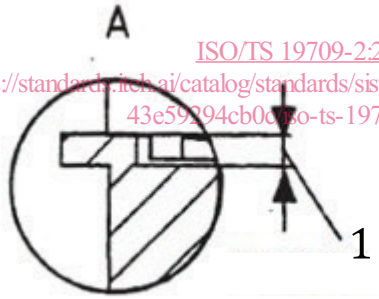
5 Dimensions, masses and applied loads

5.1 CSS SLC

5.1.1 Main dimensions and tolerances

When tested in accordance with ISO 19709-1:—, Annex A, A.2.1, A.2.2 and A.2.4, the main dimensions of the CSS SLC shall be as given in Table 1.

The flange height shall be 15 mm (see Figure 1).



Key

1 height ≥ flange height

Figure 1 — Flange height

The stacking clearance shall ensure easy location when two CSS SLCs are stacked. The stacking clearance in length and width of two CSS SLCs may not exceed 4,8 mm.

To ensure the functioning of the CSS, the overall height of an individual CSS SLC shall be 147,5 mm or 280 mm.

NOTE For the area base module of 300 mm × 200 mm only, the height ratios of 147,5 mm is applicable.

Table 1 — Main dimensions of CSS SLCs

Dimensions in millimetres

Type	Nominal dimension L × W × H	Length			Width			Height			Tolerance
		outer	inner	tolerance	outer	Inner	tolerance	total	inner	usable inner height *F*	
6 280	600 × 400 × 280	594	539,5	0 -4,8	396	357,5	0 -3,2	280	277	262[a] 252[b]	±1
6 213	600 × 400 × 213							213	210	195,8[a] 185,8[b]	
6 147	600 × 400 × 147							147,5	144,5	129,5[a] 119,5[b]	
4 280	400 × 300 × 280	396	342,5	0 -3,2	297	247	0 -2,4	280	277	262[a] 254[b]	±1
4 213	400 × 300 × 213							213	210	195,8[a] 185,8[b]	
4 147	400 × 300 × 147							147,5	144,5	129,5[a] 121,5[b]	
3 147	300 × 200 × 147	297	241,5	0 -2,4	198			147,5	144,5	129,5[a,b]	±1

[a] value without lid.

[b] value with lid.

When tested in accordance with ISO 19709-1:—, Annex A, A.2.1, A.2.2 and A.2.4, volumes and masses of CSS SLC shall be as given in Table 2.

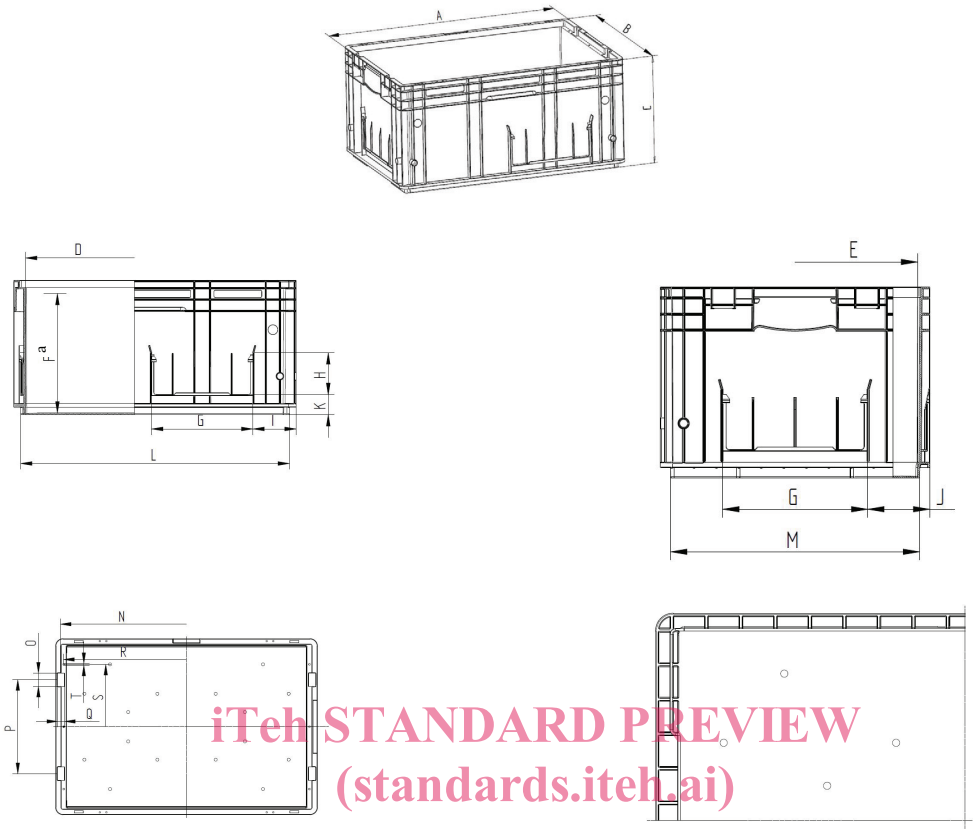
Table 2 — Volumes and masses of CSS SLCs

Type	Volume dm^3		Tare mass ±1 % kg	Nominal load kg	Nominal stacking load kg
	outer	usable inner (capacity)			
6 280	65	51,9	2,67	20	600
6 213	51	38,9	2,27		
6 147	35	25	1,82		
4 280	33	24,1	1,70		
4 213	25,5	17,9	1,42		
4 147	17	11,8	1,08		
3 147	8,7	5,3	0,57	20	400

5.1.2 Detailed dimensions for CSS SLCs

Detailed dimensions for CSS SLC shall be as given in Figures 2, 3 and 4.

Dimensions in millimetres



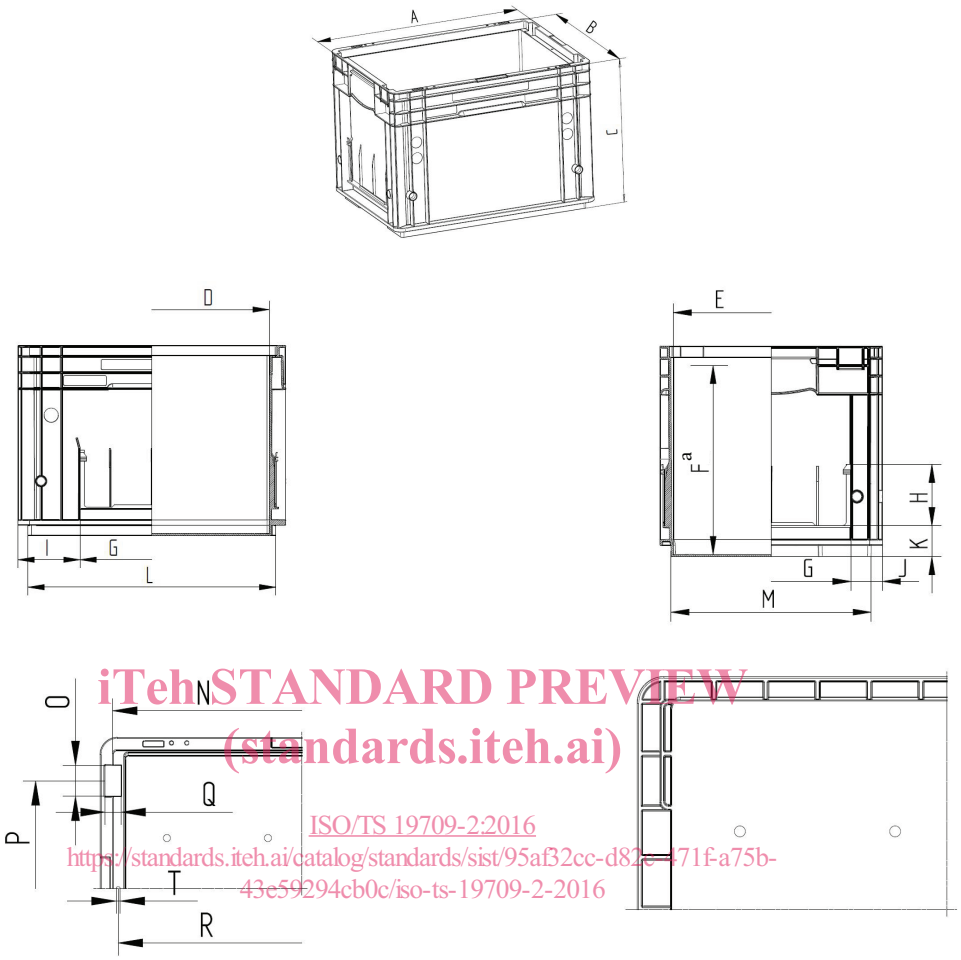
Key

a Usable inner height.

SLC type	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*	*P*	*Q*	*R*	*S*	*T*
6 147	594	396	147,5	539,5	357,5	119,5	212	82	92	92	65,5	563	366	567	30	210	15	556	280	Ø4
6 422	594	396	213	539,5	357,5	185,8	212	82	92	92	41,5	563	366	567	30	210	15	556	280	Ø4
6 280	594	396	280	539,5	357,5	252	212	82	92	92	41,5	563	366	567	30	210	15	556	280	Ø4

Figure 2 — CSS SLC type 6147 and CSS SLC type 6280

Dimensions in millimetres



Key

a Usable inner height.

SLC type	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*	*P*	*Q*	*R*	*T*
4 147	396	297	147,5	342,5	258	121,5	212	82	92	42,5	65,5	365	266	370	30	210	15	358	Ø4
4 213	396	297	213	342,5	258	185,8	212	82	92	42,5	41,5	365	266	370	30	210	15	358	Ø4
4 280	396	297	280	342,5	258	254	212	82	92	42,5	41,5	365	266	370	30	210	15	358	Ø4

Figure 3 — CSS SLC type 4147 and CSS SLC type 4280